# Chocolate distribution

Given an array A[ ] of positive integers of size N, where each value represents the number of chocolates in a packet. Each packet can have a variable number of chocolates. There are M students, the task is to distribute chocolate packets among M students such that :
1. Each student gets exactly one packet.
2. The difference between maximum number of chocolates given to a student and minimum number of chocolates given to a student is minimum.
Example 1:Input:
N = 8, M = 5
A = {3, 4, 1, 9, 56, 7, 9, 12}
Output: 6
Explanation: The minimum difference between maximum chocolates and minimum chocolates is 9 - 3 = 6 by choosing following M packets :
{3, 4, 9, 7, 9}.

Example 2:Input:
N = 7, M = 3
A = {7, 3, 2, 4, 9, 12, 56}
Output: 2
Explanation: The minimum difference between maximum chocolates and minimum chocolates is 4 - 2 = 2 by choosing following M packets :
{3, 2, 4}.
Your Task:
You don't need to take any input or print anything. Your task is to complete the function findMinDiff() which takes array A[ ], N and M as input parameters and returns the minimum possible difference between maximum number of chocolates given to a student and minimum number of chocolates given to a student.
Expected Time Complexity: O(N*Log(N))
Expected Auxiliary Space: O(1)
Constraints:
1 ≤ T ≤ 100
1 ≤ N ≤ 105
1 ≤ Ai ≤ 109
1 ≤ M ≤ N

PROGRAM:

```
package com.company;
import java.util.*;
class Main {
    static int findMinDiff(int arr[], int n, int m) {
        if (m == 0 || n == 0)
            return 0;
        Arrays.sort(arr);
        if (n < m)
            return -1;
        int min_diff = Integer.MAX_VALUE;
        int first = 0, last = 0;
        for (int i = 0; i + m - 1 < n; i++) {
            int diff = arr[i+m-1] - arr[i];
            if (diff < min_diff) {
                min_diff = diff;
                first = i;
                last = i + m - 1;
            }
        }
        return (arr[last] - arr[first]);
    }
    public static void main(String[] args) {
        int arr[] = {12, 4, 7, 9, 2, 23,
                25, 41, 30, 40, 28,
                42, 30, 44, 48, 43,
                50};
        int m = 7;
        int n = arr.length;
        System.out.println("Minimum difference is " + findMinDiff(arr, n,
m));
    }
}
```

OUTPUT :